edittoint( ) — Edit matrix for roundoff error (integers)

Description Syntax Remarks and examples Conformability Diagnostics Also see

Description

These edit functions set elements of matrices to integers that are close to integers.

`edittoint(`Z`,` *amt*`)` and `_edittoint(`Z`,` *amt*`)` set

$$Z_{ij} = \texttt{round}(Z_{ij}) \qquad \text{if } \left|Z_{ij} - \texttt{round}(Z_{ij})\right| \le \left|tol\right|$$

for Z real and set

$$\text{Re}(Z_{ij}) = \texttt{round}(\text{Re}(Z_{ij})) \qquad \text{if } \left|\text{Re}(Z_{ij}) - \texttt{round}(\text{Re}(Z_{ij}))\right| \le \left|tol\right|$$

$$\text{Im}(Z_{ij}) = \texttt{round}(\text{Im}(Z_{ij})) \qquad \text{if } \left|\text{Im}(Z_{ij}) - \texttt{round}(\text{Im}(Z_{ij}))\right| \le \left|tol\right|$$

for Z complex, where in both cases

$$tol = \texttt{abs}(amt)\texttt{*epsilon(sum(abs}(Z)\texttt{))/(rows}(Z)\texttt{*cols}(Z)\texttt{))}$$

`edittoint()` leaves Z unchanged and returns the edited matrix. `_edittoint()` edits Z in place.

`edittointtol(`Z`,` *tol*`)` and `_edittointtol(`Z`,` *tol*`)` do the same thing, except that *tol* is specified directly.

Syntax

numeric matrix	`edittoint(`*numeric matrix* Z`,` *real scalar amt*`)`
void	`_edittoint(`*numeric matrix* Z`,` *real scalar amt*`)`
numeric matrix	`edittointtol(`*numeric matrix* Z`,` *real scalar tol*`)`
void	`_edittointtol(`*numeric matrix* Z`,` *real scalar tol*`)`

Remarks and examples

These functions mirror the `edittozero()` functions documented in [M-5] **edittozero( )**, except that, rather than solely resetting to zero values close to zero, they reset to integer values close to integers.

See [M-5] **edittozero( )**. Whereas use of the functions documented there is recommended, use of the functions documented here generally is not. Although zeros commonly arise in real problems so that there is reason to suspect small numbers would be zero but for roundoff error, integers arise more rarely.

If you have reason to believe that integer values are likely, then by all means use these functions.

Conformability

`edittoint(`*Z*`,` *amt*`)`:

Z:	$r \times c$
amt:	1×1
result:	$r \times c$

`_edittoint(`*Z*`,` *amt*`)`:

input:	
Z:	$r \times c$
amt:	1×1
output:	
Z:	$r \times c$

`edittointtol(`*Z*`,` *tol*`)`:

Z:	$r \times c$
tol:	1×1
result:	$r \times c$

`_edittointtol(`*Z*`,` *tol*`)`:

input:	
Z:	$r \times c$
tol:	1×1
output:	
Z:	$r \times c$

Diagnostics

None.

Also see

[M-5] **edittozero( )** — Edit matrix for roundoff error (zeros)

[M-4] **Manipulation** — Matrix manipulation